

**IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF TEXAS
MARSHALL DIVISION**

SOVEREIGN PEAK VENTURES, LLC,

Plaintiff,

V.

**TCL TECHNOLOGY GROUP CORPORATION,
TCL INDUSTRIES HOLDINGS CO., LTD.,
TCL ELECTRONICS HOLDINGS LTD.,
TCL COMMUNICATION TECHNOLOGY
HOLDINGS LTD.,
HUIZHOU TCL MOBILE COMMUNICATION CO.
LTD.,
TCT MOBILE WORLDWIDE LTD.,
TCT MOBILE INTERNATIONAL LTD.,
SHENZHEN TCL NEW TECHNOLOGIES CO. LTD.,
TCL KING ELECTRICAL APPLIANCES
(HUIZHOU) CO. LTD.,
TCL MOKA INTERNATIONAL LTD., and
TCL MOKA MANUFACTURING S.A. DE C.V.**

Defendants.

JURY TRIAL DEMANDED

C.A. NO. _____

PLAINTIFF'S COMPLAINT FOR PATENT INFRINGEMENT

Plaintiff Sovereign Peak Ventures, LLC (“SPV”) files this Complaint against Defendants TCL Technology Group Corporation (“TCL Corp.”), TCL Industries Holdings Co., Ltd. (“TCL Industries”), TCL Electronics Holdings Ltd. (“TCL Electronics”), TCL Communication Technology Holdings Ltd. (“TCL Communication”), Huizhou TCL Mobile Communication Co. Ltd. (“Huizhou TCL”), TCT Mobile Worldwide Ltd. (“TCT Mobile Worldwide”), TCT Mobile International Ltd. (“TCT Mobile Int’l”), Shenzhen TCL New Technologies Co. Ltd. (“TCL Technology”), TCL King Electrical Appliances (Huizhou) Co. Ltd. (“TCL King”), TCL Moka International Ltd. (“TCL Moka Int’l”), and TCL Moka Manufacturing S.A. de C.V. (“TCL Moka

Mfg.”) (collectively TCL, TCL Industries, TCL Electronics, TCL Communication, Huizhou TCL, TCT Mobile Worldwide, TCT Mobile Int’l, TCL Technology, TCL King, TCL Moka Int’l, and TCL Moka Mfg. are referred to as “Defendants,” “TCL Group,” or “TCL”) for infringement of U.S. Patent No. 6,925,097 (the “’097 patent”), U.S. Patent No. 7,685,498 (the “’498 patent”), U.S. Patent No. 8,019,169 (the “’169 patent”), U.S. Patent No. 8,737,476 (the “’476 patent”), U.S. Patent No. 8,971,401 (the “’401 patent”), U.S. Patent No. 9,042,457 (the “’457 patent”), and U.S. Patent No. 9,414,059 (the “’059 patent”), collectively, the “Asserted Patents.”

THE PARTIES

1. Sovereign Peak Ventures, LLC is a Texas limited liability company, with a principal place of business in Plano, TX. SPV resides in this District.

2. On information and belief, TCL Technology Group Corporation, formerly known as TCL Corporation, is a corporation organized under the laws of the People’s Republic of China with a principal place of business in Huizhou City, Guangdong, P.R. China. TCL Corp. with TCL Group induces its subsidiaries, affiliates, retail partners, and customers in the making, using, selling, offering for sale, and/or importing throughout the United States, including within this District, products, such as mobile phones and televisions, accused of infringement. TCL Corp. in agency with the TCL Group provides a distribution channel of infringing products within this District and the U.S. nationally.

3. On information and belief, TCL Industries Holdings Co., Ltd. is a corporation organized under the laws of the People’s Republic of China with a principal place of business located at 22/F, TCL Technology Building, 17 Huifeng 3rd Road, Huizhou, Guangdong, 516000 P.R. China. TCL Corp. holds a controlling interest in TCL Industries. TCL Industries with TCL Group induces its subsidiaries, affiliates, retail partners, and customers in the making, using,

selling, offering for sale, and/or importing throughout the United States, including within this District, products, such as mobile phones and televisions, accused of infringement. TCL Industries in agency with the TCL Group provides a distribution channel of infringing products within this District and the U.S. nationally.

4. On information and belief, TCL Electronics Holdings Ltd., formerly known as TCL Multimedia Technology Holdings Ltd., is a corporation organized under the laws of the Cayman Islands with a registered address at P.O. Box 309, Ugland House, Grand Cayman, KY1-1104, Cayman Islands. TCL Electronics has a principal place of business at 9 Floor, TCL Electronics Holdings Limited Building, TCL International E City, #1001 Zhongshan Park Road, Nanshan District, Shenzhen, Guangdong, 518067 P.R. China. TCL Electronics also has a location located at 7/F, TCL Building, 22 Science Park E, Hong Kong Science Park, Hong Kong. TCL has a controlling interest in TCL Electronics. TCL Electronics is a subsidiary of TCL Industries Holdings (Hong Kong) Co. Ltd., which is wholly-owned by TCL Industries. TCL Electronics operates in agency as part of the TCL Group. TCL Electronics operates its subsidiaries along with itself as the TCL Group. TCL Electronics with TCL Group, either itself and/or through the activities of its subsidiaries, makes, uses, sells, offers for sale, and/or imports throughout the United States, including within this District, products, such as mobile phones and televisions, accused of infringement.

5. On information and belief, TCL Communication Technology Holdings Ltd. is a corporation organized under the laws of the People's Republic of China with a principal place of business in Shenzhen, Guangdong, P.R. China. TCL Communication is wholly owned by TCL Electronics. TCL Communication performs research and development in connection with the mobile phones accused of infringement in this Complaint and operates in concert with other

members of the TCL Group to manufacture and import mobile phones accused of infringement in this Complaint within this District.

6. On information and belief, Huizhou TCL Mobile Communication Co. Ltd. is a company organized and existing under the laws of the People's Republic of China with a principal place of business at No. 86 Hechang Qi Lu Xi, Zhongkai Gaoxin District, Huizhou City, Guandong Province, P.R. China. Huizhou TCL is wholly owned by TCL Communication. Huizhou TCL regularly imports and inserts into the stream of commerce mobile phones and related goods, such that infringing mobile phones will be offered for sale and sold in this District. Huizhou TCL operates in agency as part of the TCL Group.

7. On information and belief, TCT Mobile Worldwide Ltd. is a corporation organized under the laws of Hong Kong with a principal place of business at 5/F HK Science Park Bldg., Shatin, NT, Hong Kong. TCT Mobile Worldwide is wholly owned by TCL Communication. TCT Mobile Worldwide regularly imports and inserts into the stream of commerce mobile phones and components of mobile phones, such that infringing mobile phones will be offered for sale and sold in this District. TCT Mobile Worldwide operates in agency as part of the TCL Group.

8. On information and belief, TCT Mobile International Ltd. is a corporation organized and existing under the laws of Hong Kong, with a principal place of business located at 1910-12A Tower 3, China Hong Kong City, 33 Canton Road, Tsim Sha Tsui, 31802888 Hong Kong. TCT Mobile Int'l is wholly owned by TCT Mobile Worldwide. TCT Mobile Int'l regularly imports and inserts into the stream of commerce mobile phones and components of mobile phones, such that infringing mobile phones will be offered for sale and sold in this District. TCT Mobile Int'l operates in agency as part of the TCL Group.

9. On information and belief, Shenzhen TCL New Technologies Co. is a company organized and existing under the laws of the People's Republic of China with a principal place of business at 5 Shekou Industrial Avenue Shenzhen, 518067 P.R. China. TCL Technology is a subsidiary of TCL Electronics. TCL Technology performs research and development in connection with the televisions accused of infringement in this Complaint and operates in concert with other members of the TCL Group to manufacture and import televisions accused of infringement in this Complaint within this District.

10. On information and belief, TCL King Electrical Appliances (Huizhou) Co. Ltd. is a company organized and existing under the laws of the People's Republic of China with a principal place of business at 78 Zhongkai Development Zone Huizhou, 516006, China. TCL King is a subsidiary of TCL Electronics. TCL King regularly imports and inserts into the stream of commerce televisions and related goods, such that infringing televisions will be offered for sale and sold in this District. TCL King operates in agency as part of the TCL Group.

11. On information and belief, TCL Moka International Ltd. is a company organized and existing under the laws of the People's Republic of China with a principal place of business at 13/F, TCL Tower, 8 Tai Chung Road, Tsuen Wan, New Territories Hong Kong. TCL Moka Int'l is wholly-owned by TCL Electronics. TCL Moka Int'l regularly imports and inserts into the stream of commerce televisions and components of televisions, such that infringing televisions will be offered for sale and sold in this District. TCL Moka Int'l operates in agency as part of the TCL Group.

12. On information and belief, TCL Moka Manufacturing S.A. de C.V. is a company organized under the laws of Mexico with a principal place of business at Calle 4ta. No. 55, Cd. Industrial Otay, Tijuana 22500, Mexico. TCL Moka Mfg. is wholly-owned by TCL Electronics.

TCL Moka Mfg. regularly imports and inserts into the stream of commerce televisions and components of televisions, such that infringing televisions will be offered for sale and sold in this District. TCL Moka Mfg. operates in agency as part of the TCL Group.

13. On information and belief, Defendants are an interrelated group of companies which collectively comprise one of the largest electronics manufacturers in the United States.

14. The Asserted Patents were invented by employees of Panasonic Corporation (“Panasonic”). Founded in 1918, Panasonic has been at the forefront of the electronics industry for over a century. Panasonic made numerous innovations in the home appliance, battery, mobile phone, and television industries. Indeed, Panasonic’s invention of the “Paper Battery” in 1979 is widely credited as enabling the compact electronics of today. In 1991, Panasonic released the Mova P, the smallest and lightest mobile phone on the market, which revolutionized the industry by showing the demand for a compact, lightweight device. Panasonic also produced the first wide-format plasma display and developed the first digital television for the U.S. market. Panasonic’s history of innovation is also borne out by its intellectual property. Indeed, a search of the USPTO database where the patent assignee is “Panasonic” yields over 27,000 matches.

15. TCL was founded in the People’s Republic of China in the early 1980s and continues as a partially state-owned enterprise of the Chinese government. TCL launched in North America in 2014 and portrays itself as “America’s Fastest-Growing TV Brand.” *See, e.g.*, <https://tcl.com/eu/en/aboutTCL/the-group.html>; <https://www.tclusa.com/aboutus/our-story>.

16. Prior to the filing of the Complaint, SPV repeatedly attempted to engage TCL and/or its agents in licensing discussions related to the Asserted Patents, including but not limited to providing a non-discriminatory offer to license the portfolio on a worldwide basis, including both implementation and any standards-essential patents in the portfolio, that was reasonable for

a license taken in the absence of litigation. TCL ignored these overtures. TCL's past and continuing sales of its devices i) willfully infringe the Asserted Patents and ii) impermissibly take the significant benefits of SPV's patented technologies without fair compensation to SPV.

17. On information and belief, Defendants operate in agency with each other as a group. *See, e.g.*, <https://tcl.com/eu/en/aboutTCL/thegroup.html> ("The group has 75,000 employees, 28 Research and Development laboratories and 22 production sites."). TCL induces its subsidiaries, affiliates, retail partners, and customers in the making, using, selling, offering for sale, and/or importing throughout the United States, including within this District, products, such as mobile phones and televisions, accused of infringement. Defendants provide a distribution channel of infringing products within this District and the U.S. nationally. Defendants, between and amongst themselves, purposefully direct the Accused Products into established distribution channels within this District and the U.S. nationally.

18. On information and belief, Defendants maintain a corporate presence in the United States via at least its, U.S.-based sales subsidiaries including, TTE Technology, Inc. and TCT Mobile (US) Inc. TTE Technology, Inc. is a Delaware corporation with a principal place of business at 1860 Compton Avenue, Corona, California 92881. TTE Technology, Inc. provides sales, distribution, research, and development support in North America as part of the TCL Group and for its parents, e.g., TCL Corp. TTE Technology, Inc. is an agent of Defendants. TCT Mobile (US) Inc. is a Delaware corporation with a principal place of business at 25 Edelman, Suite 200, Irvine, California 92618. TCT Mobile (US) Inc. provides sales, distribution, research, and development support in North America as part of the TCL Group and for its parents, e.g., TCL Corp. TCT Mobile (US) Inc. is an agent of Defendants. At the direction and control of Defendants,

U.S.-based sales subsidiaries including, TTE Technology, Inc. and TCT Mobile (US) Inc., import infringing products, such as mobile phones and televisions, into the United States and this District.

19. On information and belief, TCL and its U.S.-based sales subsidiaries (which act as part of a global network of overseas sales and manufacturing subsidiaries on behalf of TCL) have operated as agents of one another and vicariously as parts of the same business group to work in concert together and enter into agreements that are nearer than arm's length. For example, TCL Industries, alone and via at least the activities of its U.S.-based sales subsidiaries (e.g., TTE Technology, Inc. and TCT Mobile (US) Inc.), conducts business in the United States, including importing, distributing, and selling mobile phones and televisions that incorporate devices, systems, and processes that infringe the Asserted Patents in Texas and this judicial district. *See Trois v. Apple Tree Auction Center, Inc.*, 882 F.3d 485, 490 (5th Cir. 2018) ("A defendant may be subject to personal jurisdiction because of the activities of its agent within the forum state...."); *see also Cephalon, Inc. v. Watson Pharmaceuticals, Inc.*, 629 F. Supp. 2d 338, 348 (D. Del. 2009) ("The agency theory may be applied not only to parents and subsidiaries, but also to companies that are 'two arms of the same business group,' operate in concert with each other, and enter into agreements with each other that are nearer than arm's length.").

20. Through offers to sell, sales, imports, distributions, and other related agreements to transfer ownership of Defendants' electronics, such as mobile phones and televisions, with distributors and customers operating in and maintaining a significant business presence in the U.S. and/or its U.S. subsidiaries, TTE Technology Inc. and TCT Mobile (US) Inc., Defendants do business in the U.S., the state of Texas, and in the Eastern District of Texas.

JURISDICTION AND VENUE

21. This action arises under the patent laws of the United States, namely 35 U.S.C. §§ 271, 281, and 284-285, among others.

22. This Court has subject matter jurisdiction pursuant to 28 U.S.C. §§ 1331 and 1338(a).

23. Venue is proper in this judicial district pursuant to 28 U.S.C. § 1391(c). Each Defendant is a foreign entity and may be sued in any judicial district under 28 U.S.C. § 1391(c)(3).

24. This Court has general and specific personal jurisdiction over Defendants pursuant to due process and/or the Texas Long Arm Statute because, inter alia, (i) Defendants have done and continue to do business in Texas and (ii) Defendants have, directly and through intermediaries, committed and continue to commit acts of patent infringement in the State of Texas, including making, using, offering to sell, and/or selling accused products in Texas, and/or importing accused products into Texas, including by Internet sales and sales via retail and wholesale stores, inducing others to commit acts of patent infringement in Texas, and/or committing a least a portion of any other infringements alleged herein. Defendants have placed, and are continuing to place, infringing products into the stream of commerce, via an established distribution channel, with the knowledge and/or understanding that such products are sold in Texas, including in this District. Defendants have derived substantial revenues from its infringing acts occurring within Texas and within this District. Defendants have substantial business in this State and judicial district, including: (A) at least part of its infringing activities alleged herein; and (B) regularly doing or soliciting business, engaging in other persistent conduct, and/or deriving substantial revenue from infringing goods offered for sale, sold, and imported, and services provided to Texas residents vicariously through

and/or in concert with its alter egos, intermediaries, agents, distributors, importers, customers, subsidiaries, and/or consumers.

25. This Court has personal jurisdiction over Defendants, directly or through intermediaries, distributors, importers, customers, subsidiaries, and/or consumers including its U.S.-based sales subsidiaries, e.g., TTE Technology, Inc. and TCT Mobile (US) Inc. Through direction and control of such subsidiaries, Defendants have committed acts of direct and/or indirect patent infringement within Texas, and elsewhere within the United States, giving rise to this action and/or has established minimum contacts with Texas such that personal jurisdiction over Defendants would not offend traditional notions of fair play and substantial justice. TTE Technology, Inc. and TCT Mobile (US) Inc. are wholly-owned subsidiaries of TCL. The primary business of TTE Technology, Inc. and TCT Mobile (US) Inc. is the marketing and sale of electronic products in the United States. TCL has a 100% controlling ownership interest in TTE Technology, Inc. and TCT Mobile (US) Inc. and maintains more than half of the voting rights for such subsidiaries as its basis for control. *Id.* Upon information and belief, TCL compensates TTE Technology, Inc. and TCT Mobile (US) Inc. for its sales support services in the United States. As such, TCL has a direct financial interest in its U.S.-based subsidiaries, and vice versa.

26. Personal jurisdiction is proper because Defendants have committed acts of infringement in this District. This Court has personal jurisdiction over Defendants because, *inter alia*, this action arises from activities Defendants purposefully directed towards the State of Texas and this District.

27. Exercising personal jurisdiction over Defendants in this District would not be unreasonable given Defendants' contacts in this District, the interest in this District of resolving disputes related to products sold herein, and the harm that would occur to SPV.

28. In addition, Defendants have knowingly induced and continue to knowingly induce infringement within this District by advertising, marketing, offering for sale and/or selling devices pre-loaded with infringing functionality within this District, to consumers, customers, manufacturers, distributors, resellers, partners, and/or end users, and providing instructions, user manuals, advertising, and/or marketing materials which facilitate, direct or encourage the use of infringing functionality with knowledge thereof.

29. Personal jurisdiction also exists specifically over each of the Defendants because each, directly or through affiliates, subsidiaries, agents, or intermediaries, transacts business in this State or purposefully directed at this State (including, without limitation, retail stores including Best Buy and Walmart) by making, importing, offering to sell, selling, and/or having sold infringing products within this State and District or purposefully directed at this State or District.

30. Personal jurisdiction also exists specifically over each of the Defendants because Defendants have overlapping executives, interlocking corporate structures, and close relationships as manufacturer, importer, and distributor of the products accused of infringement.

31. To the extent any foreign Defendant is not subject to jurisdiction in any state's court of general jurisdiction, exercising jurisdiction over such Defendant in this State and this District would be consistent with due process and this State's long-arm statute and under national contacts in light of facts alleged in this Complaint.

32. In addition, each of the Defendants, directly or through affiliates, subsidiaries, agents, or intermediaries, places infringing products into the stream of commerce knowing they will be sold and used in Texas, and economically benefits from the retail sale of infringing products in this State. For example, Defendants' products have been sold and are available for sale in this District at Best Buy and Walmart retail stores, and are also available for sale and offered for sale

in this District through online retailers such as Best Buy, Walmart, and Amazon. TCL also advertises its infringing products to consumers in Texas and this District through its agent's websites. *See, e.g.*, <https://www.tclusa.com/products/home-theater>.

33. With respect to the Asserted Patents, the Accused Products devices that support H.265 video, including, but not limited to mobile phones (e.g., TCL 10L, TCL 10 PRO) and televisions (e.g., 75S434, 65S434, 55S434, 50S434, 43S434, 40S330, 32S330, 49S303, 49S325, 49S305, 43S325, 43S305, 43S303, 40S303, 40S325, 40S305, 32S321, 32S331, 32S305, 32S327, 32S325, 32S301, 32S335, 28S305, 75S425, 75S423, 75S421, 75S435, 75S431, 65S401, 65S403, 65S425, 65S423, 65S405, 65S421, 65S435, 55S403, 55S401, 55S425, 55S423, 55S405, 55S421, 55S435, 50S423, 50S421, 50S425, 50S435, 49S425, 49S403, 49S405, 43S425, 43S403, 43S423, 43S421, 43S405, 43S435, 75S535, 65S517, 65S515, 65S525, 65S535, 55S515, 55S517, 55S525, 55S535, 50S525, 50S535, 49S515, 49S517, 43S515, 43S525, 43S517, 75R617, 75R615, 75R635, 65R625, 65R617, 65R615, 65R635, 55R617, 55R615, 55R613, 55R625, 55R635, 75Q825, 65Q825, 55S20, 55P607, 55P605, 75C803, 75C807, 65C807, 65US5800, 55C803, 55UP120, 50UP120, 43UP120, 55UP130, 50UP130, 43UP130, 55US5800, 43FP110, 49FP110, 55FSS3700, 32S3700, 48FS3700, 55FS3750, 48FS3750, 40FS3750, 28S3750, 32S3750, 55FS3800, 40FS3800, 32S3800, 50FS3850, 55S3850, 40FS3850, 32S3850, 48FS4610, 32S4610R, 40FS4610R, 48FS4610R, 55FS4610R, LE50UHDE5691), as well as, their components, and processes related to the same. On information and belief, TCL controls or otherwise directs and authorizes all activities of its U.S.-based sales subsidiaries, including TTE Technology Inc. and TCT Mobile (US) Inc. Such directed and authorized activities include, the U.S. Subsidiaries' using, offering for sale, selling, and/or importing the Accused Products, their components, and/or products containing the same that incorporate the fundamental technologies covered by the Asserted Patents. The Defendants'

U.S.-based sales subsidiaries (e.g., TTE Technology Inc. and TCT Mobile (US) Inc.) are authorized to import, distribute, sell, or offer for sale the Accused Products on behalf of Defendants. For example, TCL researches, designs, develops, and manufactures mobile phones and then directs its U.S.-based sales subsidiaries to import, distribute, offer for sale, and sell the Accused Products in the United States. *See, e.g., United States v. Hui Hsiung*, 778 F.3d 738, 743 (9th Cir. 2015) (finding that the sale of infringing products to third parties rather than for direct import into the U.S. did not “place [defendants’] conduct beyond the reach of United States law [or] escape culpability under the rubric of extraterritoriality”). Furthermore, Defendants’ U.S.-based sales subsidiaries also administer, on behalf of Defendants, requests for service under and any disputes arising from Defendants’ limited warranty of the Accused Products sold in the U.S., including in Texas and this judicial district. *See, e.g.,* <https://us.alcatelmobile.com/warranty/>. Thus, Defendants’ U.S.-based sales subsidiaries conduct infringing activities on behalf of Defendants.

34. On information and belief, Defendants’ U.S.-based sales subsidiaries corporate presence in the United States gives TCL substantially the business advantages that it would have enjoyed if it conducted its business through its own offices or paid agents in the state. Defendants’ U.S.-based sales subsidiaries are authorized to import, distribute, sell, and offer for sale Defendants’ products, including mobile phones incorporating infringing devices and processes, on behalf of Defendants. For example, Defendants’ U.S.-based sales subsidiaries operate within Defendants’ global network of sales subsidiaries in North and South America, Europe, Asia, Africa, and the Middle East. In the U.S., including within the Eastern District of Texas, Defendants’ mobile phones and televisions, which incorporate infringing devices and processes, are imported, distributed, offered for sale, and sold.

35. Via Defendants' alter egos, agents, intermediaries, distributors, importers, customers, subsidiaries, and/or consumers maintaining a business presence, operating in, and/or residing in the U.S., Defendants' products, including products and processes accused of infringing the Asserted Patents, are or have been widely distributed and sold in retail stores, both brick and mortar and online, in Texas including within this judicial district. *See Litecubes, LLC v. Northern Light Products, Inc.*, 523 F.3d 1353, 1369-70 (Fed. Cir. 2008) ("[T]he sale [for purposes of § 271] occurred at the location of the buyer."); *see also Semcon IP Inc. v. Kyocera Corp.*, No. 2:18-cv-00197-JRG, 2019 WL 1979930, at *3 (E.D. Tex. May 3, 2019) (denying accused infringer's motion to dismiss because plaintiff sufficiently plead that purchases of infringing products outside of the United States for importation into and sales to end users in the U.S. may constitute an offer to sell under § 271(a)). For example, Defendants' phones are sold to end users by the U.S.-based subsidiaries, distributors, and customers, including, but not limited to, TTE Technology Inc. and TCT Mobile (US) Inc., online and at retail stores located throughout the Eastern District of Texas.

36. On information and belief, TCL has placed and continues to place infringing products and/or products that practice infringing processes into the stream of commerce via established distribution channels comprising at least subsidiaries and distributors, such as TTE Technology Inc. and TCT Mobile (US) Inc., and customers such as AT&T and Verizon, with the knowledge and/or intent that those products are and/or will be imported, used, offered for sale, sold, and continue to be sold in the United States and Texas, including in this judicial district. For example, in 2019 TCL reported 10,973 billion HK\$ (about 13.42 billion USD) in North American sales of its television products. *See 2019 Annual Report*, TCL ELECTRONICS (March 2020), at p. 189, *available at* <https://doc.irasia.com/listco/hk/tclelectronics/annual/2019/ar2019.pdf>. As a result, TCL has, vicariously through and/or in concert with its alter egos, agents, intermediaries,

distributors, importers, customers, subsidiaries, and/or consumers, placed the Accused Products into the stream of commerce via established distribution channels with the knowledge and/or intent that those products were sold and continue to be sold in the United States and Texas, including in this judicial district.

37. In the alternative, the Court has personal jurisdiction over Defendants under Federal Rule of Civil Procedure 4(k)(2), because the claims for patent infringement in this action arise under federal law, Defendants are not subject to the jurisdiction of the courts of general jurisdiction of any state, and exercising jurisdiction over Defendants is consistent with the U.S. Constitution.

38. Venue is proper in this judicial district pursuant to 28 U.S.C. § 1391 because, among other things, Defendant is not a resident in the United States, and thus may be sued in any judicial district, including this one, pursuant to 28 U.S.C. § 1391(c)(3). *See In re HTC Corp.*, 889 F.3d 1349, 1357 (Fed. Cir. 2018) (“The Court’s recent decision in *TC Heartland* does not alter” the alien-venue rule.).

COUNT I

(INFRINGEMENT OF U.S. PATENT NO. 6,925,097)

39. Plaintiff incorporates paragraphs 1 through 38 herein by reference.

40. SPV is the assignee of the '097 patent, entitled “Decoder, decoding method, multiplexer, and multiplexing method,” with ownership of all substantial rights in the '097 patent, including the right to exclude others and to enforce, sue, and recover damages for past and future infringements.

41. The '097 patent is valid, enforceable, and was duly issued in full compliance with Title 35 of the United States Code. The '097 patent issued from U.S. Patent Application No. 09/820,311.

42. TCL has and continues to directly and/or indirectly infringe (by inducing infringement) one or more claims of the '097 patent in this judicial district and elsewhere in Texas and the United States.

43. On information and belief, TCL designs, develops, manufactures, assembles and markets mobile phones, televisions, and other devices configured to decode H.265 video. *See* <https://www.businesswire.com/news/home/20140904006500/en/Leading-TV-Maker-TCL-Adopt-DivX%C2%AE-HEVC> (last visited Jan. 9, 2021) (stating “TCL Corporation will adopt the industry leading DivX® HEVC technology for its global line of digital televisions, enabling the playback of high-quality, highly efficient Ultra HD (4K) video in the living room”); *see also* <https://www.amazon.com/ask/questions/TxH21ZVXC0DLJT> (last visited Jan. 9, 2021) (stating “The built-in media Player on TCL Roku TVs is designed to play movies, pictures, and music using the most popular file formats, including HEVC/H.265.”).

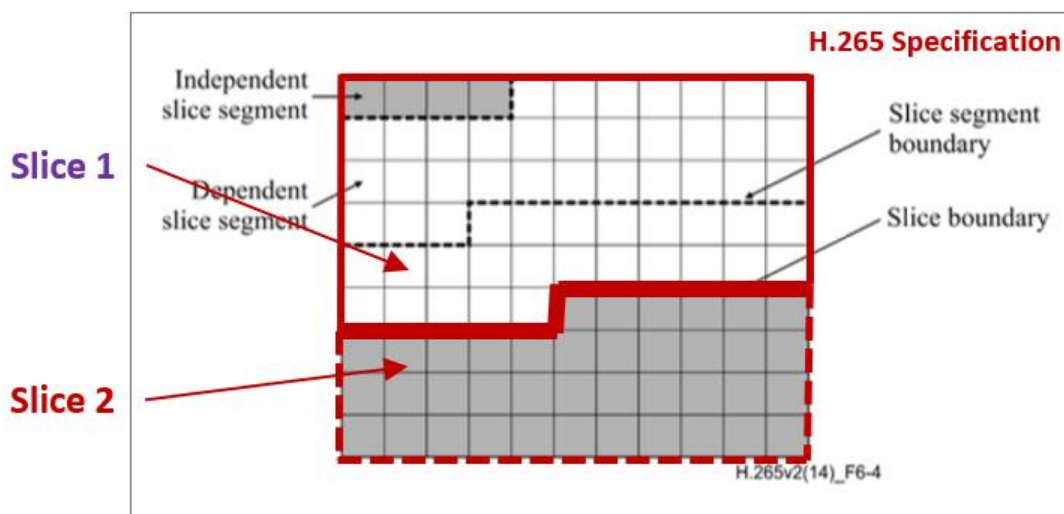
44. TCL directly infringes the '097 patent via 35 U.S.C. § 271(a) by making, offering for sale, selling, and/or importing those Accused Products, their components and processes, and/or products containing the same that incorporate the fundamental technologies covered by the '097 patent to, for example, its alter egos, agents, intermediaries, distributors, importers, customers, subsidiaries, and/or consumers. Furthermore, on information and belief, TCL sells and makes the Accused Products outside of the United States, delivers those products to its customers, distributors, and/or subsidiaries in the United States, or in the case that it delivers the Accused Products outside of the United States it does so intending and/or knowing that those products are destined for the United States and/or designing those products for sale in the United States, thereby directly infringing the '097 patent. *See, e.g., Lake Cherokee Hard Drive Techs., L.L.C. v. Marvell Semiconductor, Inc.*, 964 F. Supp. 2d 653, 658 (E.D. Tex. 2013). Furthermore, TCL directly

infringes the '097 patent through its direct involvement in the activities of its subsidiaries, including TTE Technology, Inc. and TCT Mobile (US) Inc., including by selling and offering for sale the Accused Products directly to such subsidiaries and importing the Accused Products into the United States for such subsidiaries. Such subsidiaries conduct activities that constitute direct infringement of the '097 patent under 35 U.S.C. § 271(a) by making, offering for sale, selling, and/or importing those Accused Products. For example, and on information and belief, TCL offers for sale, sells, and imports the Accused Products within the U.S. to, for example, its distributors, customers, subsidiaries, importers, and/or consumers. Further, TCL is vicariously liable for this infringing conduct of its U.S.-based sales subsidiaries, e.g., TTE Technology, Inc. and TCT Mobile (US) Inc., (under both the alter ego and agency theories) because, as an example and on information and belief, TCL and TTE Technology, Inc. and TCT Mobile (US) Inc. are essentially the same company, and TCL has the right and ability to control its subsidiaries infringing acts and receives a direct financial benefit from the infringement of its U.S.-based sales subsidiaries, e.g., TTE Technology, Inc. and TCT Mobile (US) Inc.

45. For example, TCL infringes claim 4 of the '097 patent via the Accused Products. The Accused Products perform the “decoding method for carrying out a decoding process for a multiplexed stream which is obtained by multiplexing plural streams in parallel for each of the streams included in the multiplexed stream” of claim 4. For example, the Accused Products implement a decoding method to carry out a H.265/HEVC decoding process using multi-level slice fragmentation feature. The decoding process decodes input image bitstream(s) including picture frames, each individually a multiplexed stream that is obtained by encoding multiple smaller units (plural streams) that comprise the entire bitstream including its picture frames.

46. The Accused Products perform “separating the multiplexed stream into plural streams.” For example, the HEVC decoding process involves dividing an encoded input bitstream including individual picture frames, each of which is a multiplexed stream, into multiple slices (“plural streams”).

47. The Accused Products perform “selecting one of the plural separated streams such that a target of a decoding process is converted from one stream to another stream.” For example, the HEVC decoding process involves decoding each of the slices in an input picture frame one by one until all slice segments in a slice are decoded, ensuring that the entire slice is decoded before moving to the following slice:



In the example above, one of the plural separated streams, slice 1, is selected to be decoded first, followed by slice 2 in the decoding process, thereby switching the decoding order from slice 1 to slice 2 (“such that a target of a decoding process converted from one stream to another stream”).

48. The Accused Products perform “decoding one of the plural separated streams output by the stream selection process.” For example, the selection process from the above example selects slice 1 which is then decoded. The entire slice (all slice segments) is decoded in the decoding process.

49. The Accused Products perform “wherein said selecting comprises detecting a stream switchable position in a stream being subjected to said decoding, at which position said decoding can be interrupted, and performing said selecting such that said decoding for the stream which is being processed is interrupted at the stream switchable position.” For example, HEVC decoding process detects the end of the last slice segment in a slice, which is a stream switchable position where the decoding can be interrupted. After the decoding is interrupted, decoding for the following slice (slice 2 in the example above) begins.

50. The technology discussion above and the exemplary Accused Products provide context for Plaintiff’s infringement allegations.

51. At a minimum, TCL has known of the ’097 patent at least as early as the filing date of the complaint. In addition, TCL has known about the ’097 patent since at least December 10, 2020, when TCL was given access to a data room providing notice of its infringement.

52. On information and belief, since at least the above-mentioned date when TCL was on notice of its infringement, TCL has actively induced, under U.S.C. § 271(b), its distributors, customers, subsidiaries, importers, and/or consumers that import, purchase, or sell the Accused Products that include or are made using all of the limitations of one or more claims of the ’097 patent to directly infringe one or more claims of the ’097 patent by using, offering for sale, selling, and/or importing the Accused Products. Since at least the notice provided on the above-mentioned date, TCL does so with knowledge, or with willful blindness of the fact, that the induced acts constitute infringement of the ’097 patent. TCL intends to cause, and has taken affirmative steps to induce infringement by its distributors, importers, customers, subsidiaries, and/or consumers by at least, inter alia, creating advertisements that promote the infringing use of the Accused Products, creating and/or maintaining established distribution channels for the Accused Products into and

within the United States, manufacturing the Accused Products in conformity with U.S. laws and regulations, distributing or making available instructions or manuals for these products to purchasers and prospective buyers, testing and certifying features related to H.265 decoding in the Accused Products, and/or providing technical support, replacement parts, or services for these products to these purchasers in the United States.

53. On information and belief, despite having knowledge of the '097 patent and knowledge that it is directly and/or indirectly infringing one or more claims of the '097 patent, TCL has nevertheless continued its infringing conduct and disregarded an objectively high likelihood of infringement. TCL's infringing activities relative to the '097 patent have been, and continue to be, willful, wanton, malicious, in bad-faith, deliberate, consciously wrongful, flagrant, characteristic of a pirate, and an egregious case of misconduct beyond typical infringement such that Plaintiff is entitled under 35 U.S.C. § 284 to enhanced damages up to three times the amount found or assessed.

54. SPV has been damaged as a result of TCL's infringing conduct described in this Count. TCL is, thus, liable to SPV in an amount that adequately compensates SPV for TCL's infringements, which, by law, cannot be less than a reasonable royalty, together with interest and costs as fixed by this Court under 35 U.S.C. § 284.

COUNT II

(INFRINGEMENT OF U.S. PATENT NO. 7,685,498)

55. Plaintiff incorporates paragraphs 1 through 54 herein by reference.

56. SPV is the assignee of the '498 patent, entitled "Digital broadcasting system and digital broadcast transmission and reception method," with ownership of all substantial rights in the '498 patent, including the right to exclude others and to enforce, sue, and recover damages for past and future infringements.

57. The '498 patent is valid, enforceable, and was duly issued in full compliance with Title 35 of the United States Code. The '498 patent issued from U.S. Patent Application No. 10/586,438.

58. TCL has and continues to directly and/or indirectly infringe (by inducing infringement) one or more claims of the '498 patent in this judicial district and elsewhere in Texas and the United States.

59. On information and belief, TCL designs, develops, manufactures, assembles and markets mobile phones, televisions, and other devices configured to decode H.265 video. *See* <https://www.businesswire.com/news/home/20140904006500/en/Leading-TV-Maker-TCL-Adopt-DivX%C2%AE-HEVC> (last visited Jan. 9, 2021) (stating “TCL Corporation will adopt the industry leading DivX® HEVC technology for its global line of digital televisions, enabling the playback of high-quality, highly efficient Ultra HD (4K) video in the living room”); *see also* <https://www.amazon.com/ask/questions/TxH21ZVXC0DLJT> (last visited Jan. 9, 2021) (stating “The built-in media Player on TCL Roku TVs is designed to play movies, pictures, and music using the most popular file formats, including HEVC/H.265.”).

60. TCL directly infringes the '498 patent via 35 U.S.C. § 271(a) by making, offering for sale, selling, and/or importing those Accused Products, their components and processes, and/or products containing the same that incorporate the fundamental technologies covered by the '498 patent to, for example, its alter egos, agents, intermediaries, distributors, importers, customers, subsidiaries, and/or consumers. Furthermore, on information and belief, TCL sells and makes the Accused Products outside of the United States, delivers those products to its customers, distributors, and/or subsidiaries in the United States, or in the case that it delivers the Accused Products outside of the United States it does so intending and/or knowing that those products are

destined for the United States and/or designing those products for sale in the United States, thereby directly infringing the '498 patent. *See, e.g., Lake Cherokee Hard Drive Techs., L.L.C. v. Marvell Semiconductor, Inc.*, 964 F. Supp. 2d 653, 658 (E.D. Tex. 2013). Furthermore, TCL directly infringes the '498 patent through its direct involvement in the activities of its subsidiaries, including TTE Technology, Inc. and TCT Mobile (US) Inc., including by selling and offering for sale the Accused Products directly to such subsidiaries and importing the Accused Products into the United States for such subsidiaries. Such subsidiaries conduct activities that constitute direct infringement of the '498 patent under 35 U.S.C. § 271(a) by making, offering for sale, selling, and/or importing those Accused Products. For example, and on information and belief, TCL offers for sale, sells, and imports the Accused Products within the U.S. to, for example, its distributors, customers, subsidiaries, importers, and/or consumers. Further, TCL is vicariously liable for this infringing conduct of its U.S.-based sales subsidiaries, e.g., TTE Technology, Inc. and TCT Mobile (US) Inc., (under both the alter ego and agency theories) because, as an example and on information and belief, TCL and TTE Technology, Inc. and TCT Mobile (US) Inc. are essentially the same company, and TCL has the right and ability to control its subsidiaries infringing acts and receives a direct financial benefit from the infringement of its U.S.-based sales subsidiaries, e.g., TTE Technology, Inc. and TCT Mobile (US) Inc.

61. For example, TCL infringes claim 10 of the '498 patent via the Accused Products. The Accused Products comprise the “reception apparatus for use in a digital broadcasting system for transmitting and receiving, via a network, a broadcast stream created from a broadcast source, the broadcast source including image and audio data and being used for broadcasting” of claim 10. For example, the Accused Products are each a reception apparatus that receives digital HEVC-encoded content streams of video and audio, such as HEVC encoded live broadcast content. *See,*

e.g., <https://www.tcl.com/us/en/blog/article/how-to-watch-nhl-playoffs> (last visited on Jan. 9, 2021).

62. The Accused Products each comprise “a receiving unit operable to receive the broadcast stream via the network.” For example, the Accused Products are configured to receive the H.265 encoded broadcast stream via the internet. *See, e.g.*, <https://www.tcl.com/us/en/blog/article/how-to-watch-nhl-playoffs> (last visited on Jan. 9, 2021).

63. The Accused Products each comprise “a decoding unit operable to extract, from the received broadcast stream, at least one of a first layer code and a second layer code, the first layer code and the second layer code (i) being generated from the broadcast source coded based on a characteristic of the broadcast source, and (ii) respectively being for reproduction of the broadcast source.” For example, the Accused Products have H.265 decoding units that are configured to extract coded NAL Unit Types (`nal_unit_type`) from the received stream. The NAL Unit Types correspond to the first layer code and second layer code. The NAL Unit Type is generated during the coding process at the broadcast source and coded based on the broadcast source (i.e., VCL NAL Units contain picture data and non-VCL NAL Units contain supplemental decoding information). The NAL Unit Type identifies whether a NAL Unit is a Video Coding Layer NAL Unit or a non-VCL NAL Unit. The codes are used for the decoding process.

64. The Accused Products each comprise “a reproducing unit operable to reproduce the broadcast source using the at least one of the first layer code and the second layer code extracted by said decoding unit.” For example, the Accused Products have a unit that outputs a signal that is a reproduction of the source media. The devices use the NAL Unit Types to reconstruct the media. For example the NAL Unit Types govern the picture output order. The Accused Products are configured to display the reproduced broadcast source.

65. The technology discussion above and the exemplary Accused Products provide context for Plaintiff's infringement allegations.

66. At a minimum, TCL has known of the '498 patent at least as early as the filing date of the complaint. In addition, TCL has known about the '498 patent since at least September 11, 2020, when TCL was given access to a data room providing notice of its infringement.

67. On information and belief, since at least the above-mentioned date when TCL was on notice of its infringement, TCL has actively induced, under U.S.C. § 271(b), distributors, customers, subsidiaries, importers, and/or consumers that import, purchase, or sell the Accused Products that include or are made using all of the limitations of one or more claims of the '498 patent to directly infringe one or more claims of the '498 patent by using, offering for sale, selling, and/or importing the Accused Products. Since at least the notice provided on the above-mentioned date, TCL does so with knowledge, or with willful blindness of the fact, that the induced acts constitute infringement of the '498 patent. TCL intends to cause, and have taken affirmative steps to induce infringement by distributors, importers, customers, subsidiaries, and/or consumers by at least, *inter alia*, creating advertisements that promote the infringing use of the Accused Products, creating and/or maintaining established distribution channels for the Accused Products into and within the United States, manufacturing the Accused Products in conformity with U.S. laws and regulations, distributing or making available instructions or manuals for these products to purchasers and prospective buyers, testing wireless networking features in the Accused Products, and/or providing technical support, replacement parts, or services for these products to these purchasers in the United States.

68. On information and belief, despite having knowledge of the '498 patent and knowledge that it is directly and/or indirectly infringing one or more claims of the '498 patent,

TCL has nevertheless continued its infringing conduct and disregarded an objectively high likelihood of infringement. TCL's infringing activities relative to the '498 patent have been, and continue to be, willful, wanton, malicious, in bad-faith, deliberate, consciously wrongful, flagrant, characteristic of a pirate, and an egregious case of misconduct beyond typical infringement such that Plaintiff is entitled under 35 U.S.C. § 284 to enhanced damages up to three times the amount found or assessed.

69. SPV has been damaged as a result of TCL's infringing conduct described in this Count. TCL is, thus, liable to SPV in an amount that adequately compensates SPV for TCL's infringements, which, by law, cannot be less than a reasonable royalty, together with interest and costs as fixed by this Court under 35 U.S.C. § 284.

COUNT III

(INFRINGEMENT OF U.S. PATENT NO. 8,019,169)

70. Plaintiff incorporates paragraphs 1 through 69 herein by reference.

71. SPV is the assignee of the '169 patent, entitled "Image coding apparatus, image decoding apparatus, image processing apparatus and methods thereof," with ownership of all substantial rights in the '169 patent, including the right to exclude others and to enforce, sue, and recover damages for past and future infringements.

72. The '169 patent is valid, enforceable, and was duly issued in full compliance with Title 35 of the United States Code. The '169 patent issued from U.S. Patent Application No. 12/014,895.

73. TCL has and continues to directly and/or indirectly infringe (by inducing infringement) one or more claims of the '169 patent in this judicial district and elsewhere in Texas and the United States.

74. On information and belief, TCL designs, develops, manufactures, assembles and markets mobile phones, televisions, and other devices configured to decode H.265 video. *See* <https://www.businesswire.com/news/home/20140904006500/en/Leading-TV-Maker-TCL-Adopt-DivX%C2%AE-HEVC> (last visited Jan. 9, 2021) (stating “TCL Corporation will adopt the industry leading DivX® HEVC technology for its global line of digital televisions, enabling the playback of high-quality, highly efficient Ultra HD (4K) video in the living room”); *see also* <https://www.amazon.com/ask/questions/TxH21ZVXC0DLJT> (last visited Jan. 9, 2021) (stating “The built-in media Player on TCL Roku TVs is designed to play movies, pictures, and music using the most popular file formats, including HEVC/H.265.”).

75. TCL directly infringes the ’169 patent via 35 U.S.C. § 271(a) by making, offering for sale, selling, and/or importing those Accused Products, their components and processes, and/or products containing the same that incorporate the fundamental technologies covered by the ’169 patent to, for example, its alter egos, agents, intermediaries, distributors, importers, customers, subsidiaries, and/or consumers. Furthermore, on information and belief, TCL sells and makes the Accused Products outside of the United States, delivers those products to its customers, distributors, and/or subsidiaries in the United States, or in the case that it delivers the Accused Products outside of the United States it does so intending and/or knowing that those products are destined for the United States and/or designing those products for sale in the United States, thereby directly infringing the ’169 patent. *See, e.g., Lake Cherokee Hard Drive Techs., L.L.C. v. Marvell Semiconductor, Inc.*, 964 F. Supp. 2d 653, 658 (E.D. Tex. 2013). Furthermore, TCL directly infringes the ’169 patent through its direct involvement in the activities of its subsidiaries, including TTE Technology, Inc. and TCT Mobile (US) Inc., including by selling and offering for sale the Accused Products directly to such subsidiaries and importing the Accused Products into

the United States for such subsidiaries. Such subsidiaries conduct activities that constitute direct infringement of the '169 patent under 35 U.S.C. § 271(a) by making, offering for sale, selling, and/or importing those Accused Products. For example, and on information and belief, TCL offers for sale, sells, and imports the Accused Products within the U.S. to, for example, its distributors, customers, subsidiaries, importers, and/or consumers. Further, TCL is vicariously liable for this infringing conduct of its U.S.-based sales subsidiaries, e.g., TTE Technology, Inc. and TCT Mobile (US) Inc., (under both the alter ego and agency theories) because, as an example and on information and belief, TCL and TTE Technology, Inc. and TCT Mobile (US) Inc. are essentially the same company, and TCL has the right and ability to control its subsidiaries infringing acts and receives a direct financial benefit from the infringement of its U.S.-based sales subsidiaries, e.g., TTE Technology, Inc. and TCT Mobile (US) Inc.

76. For example, TCL infringes claim 21 of the '169 patent via the Accused Products. The Accused Products perform the “image decoding method” of claim 21. For example, the Accused Products implement a decoding method to carry out a H.265/HEVC decoding process.

77. The Accused Products perform “acquiring a bit stream and additional information which indicates a first still image.” For example, in the HEVC decoding process a decoder acquires a bit stream and additional information by receiving an input bitstream and extracting a sub-bitstream (additional information) identified as BitstreamToDecode that indicates a current picture (first still image) via the variable CurrPic. The ITU-T H.265 Standard provides support for this:

8 Decoding process

8.1 General decoding process

8.1.1 General

Input to this process is a bitstream. Output of this process is a list of decoded pictures.

sub-bitstream extraction process: A specified process by which *NAL units* in a *bitstream* that do not belong to a target set, determined by a target highest TemporalId and a target *layer identifier list*, are removed from the bitstream, with the output sub-bitstream consisting of the NAL units in the bitstream that belong to the target set.

F.8.1.3 Common decoding process for a coded picture

The decoding processes specified in the remainder of this clause apply to each coded picture, referred to as the current picture and denoted by the variable CurrPic, in BitstreamToDecode.

78. The Accused Products perform “acquiring a second still image indicated in the additional information.” For example, in the HEVC decoding process, the decoder acquires a reference picture (second still image) by selecting a reference picture from a reference picture list, which is included in the sub-bitstream (additional information). The ITU-T H.265 Standard provides support for this:

8.3.2 Decoding process for reference picture set

This process is invoked once per picture, after decoding of a slice header but prior to the decoding of any coding unit and prior to the decoding process for reference picture list construction for the slice as specified in clause 8.3.4. This process may result in one or more reference pictures in the DPB being marked as “unused for reference” or “used for long-term reference”.

NOTE 1 – The RPS is an absolute description of the reference pictures used in the decoding process of the current and future coded pictures. The RPS signalling is explicit in the sense that all reference pictures included in the RPS are listed explicitly.

8.3.4 Decoding process for reference picture lists construction

This process is invoked at the beginning of the decoding process for each P or B slice.

Reference pictures are addressed through reference indices as specified in clause 8.5.3.3.2. A reference index is an index into a reference picture list. When decoding a P slice, there is a single reference picture list RefPicList0. When decoding a B slice, there is a second independent reference picture list RefPicList1 in addition to RefPicList0.

At the beginning of the decoding process for each slice, the reference picture lists RefPicList0 and, for B slices, RefPicList1 are derived.

8.5.3.3.2 Reference picture selection process

Input to this process is a reference index refIdxLX .

Output of this process is a reference picture consisting of a two-dimensional array of luma samples refPicLX_L and, when ChromaArrayType is not equal to 0, two two-dimensional arrays of chroma samples refPicLX_{Cb} and refPicLX_{Cr} .

The output reference picture $\text{RefPicListX}[\text{refIdxLX}]$ consists of a $\text{pic_width_in_luma_samples}$ by $\text{pic_height_in_luma_samples}$ array of luma samples refPicLX_L and, when ChromaArrayType is not equal to 0, two $\text{PicWidthInSamplesC}$ by $\text{PicHeightInSamplesC}$ arrays of chroma samples refPicLX_{Cb} and refPicLX_{Cr} .

The reference picture sample arrays refPicLX_L , refPicLX_{Cb} and refPicLX_{Cr} correspond to decoded sample arrays S_L , S_{Cb} and S_{Cr} derived in clause 8.7 for a previously-decoded picture.

79. The Accused Products perform “generating a predictive image for the first image using the second still image as a reference image.” For example, in the inter prediction processes

included in the H.265 decoding process, the predictive picture is created from the reference picture. The output of the inter prediction decoding is a modified reconstructed picture before deblocking filtering, which is a predictive image. The ITU-T H.265 Standard provides support for this:

3.69 inter prediction: A prediction derived in a manner that is dependent on data elements (e.g., sample values or motion vectors) of one or more reference pictures.

NOTE – A prediction from a reference picture that is the current picture itself is also inter prediction.

8.5 Decoding process for coding units coded in inter prediction mode

8.5.1 General decoding process for coding units coded in inter prediction mode

Inputs to this process are:

- a luma location (x_{Cb} , y_{Cb}) specifying the top-left sample of the current luma coding block relative to the top-left luma sample of the current picture,
- a variable $\log_2 CbSize$ specifying the size of the current coding block.

Output of this process is a modified reconstructed picture before deblocking filtering.

8.5.2 Inter prediction process

This process is invoked when decoding coding unit whose $CuPredMode[x_{Cb}][y_{Cb}]$ is not equal to $MODE_INTRA$.

Inputs to this process are:

- a luma location (x_{Cb} , y_{Cb}) specifying the top-left sample of the current luma coding block relative to the top-left luma sample of the current picture,
- a variable $\log_2 CbSize$ specifying the size of the current luma coding block.

Outputs of this process are:

- an $(nCbS_L) \times (nCbS_L)$ array $predSamples_L$ of luma prediction samples, where $nCbS_L$ is derived as specified below,
- when $ChromaArrayType$ is not equal to 0, an $(nCbSw_C) \times (nCbSh_C)$ array $predSamples_{Cb}$ of chroma prediction samples for the component Cb , where $nCbSw_C$ and $nCbSh_C$ are derived as specified below,
- when $ChromaArrayType$ is not equal to 0, an $(nCbSw_C) \times (nCbSh_C)$ array $predSamples_{Cr}$ of chroma prediction samples for the component Cr , where $nCbSw_C$ and $nCbSh_C$ are derived as specified below.

80. The Accused Products perform “adding prediction residual obtained from the bit stream indicating the first image and the predictive image to obtain the first still image.” For example, in the HEVC decoding process, arrays of prediction residual samples obtained from the bit stream, at a location where the additional information $BitstreamToDecode$ indicating the first still image was extracted, are added to the predictive image (as array of samples predicted for the first still image) to generate the first still image. The ITU-T H.265 Standard provides support for this:

The decoding process for coding units coded in inter prediction mode consists of the following ordered steps:

1. The inter prediction process as specified in clause 8.5.2 is invoked with the luma location (x_{Cb} , y_{Cb}) and the luma coding block size $\log_2 CbSize$ as inputs, and the outputs are the array $predSamples_L$ and, when ChromaArrayType is not equal to 0, the arrays $predSamples_{Cb}$ and $predSamples_{Cr}$.
2. The decoding process for the residual signal of coding units coded in inter prediction mode specified in clause 8.5.4 is invoked with the luma location (x_{Cb} , y_{Cb}) and the luma coding block size $\log_2 CbSize$ as inputs, and the outputs are the array $resSamples_L$ and, when ChromaArrayType is not equal to 0, the arrays $resSamples_{Cb}$ and $resSamples_{Cr}$.

8.6.7 Picture construction process prior to in-loop filter process

Inputs to this process are:

- a location (x_{Curr} , y_{Curr}) specifying the top-left sample of the current block relative to the top-left sample of the current picture component,
- the variables $nCurrSw$ and $nCurrSh$ specifying the width and height, respectively, of the current block,
- a variable $cIdx$ specifying the colour component of the current block,
- an $(nCurrSw) \times (nCurrSh)$ array $predSamples$ specifying the predicted samples of the current block,
- an $(nCurrSw) \times (nCurrSh)$ array $resSamples$ specifying the residual samples of the current block.

Depending on the value of the colour component $cIdx$, the following assignments are made:

- If $cIdx$ is equal to 0, $recSamples$ corresponds to the reconstructed picture sample array S_L and the function $clipCidx1$ corresponds to $Clip1_Y$.
- Otherwise, if $cIdx$ is equal to 1, $recSamples$ corresponds to the reconstructed chroma sample array S_{Cb} and the function $clipCidx1$ corresponds to $Clip1_C$.
- Otherwise ($cIdx$ is equal to 2), $recSamples$ corresponds to the reconstructed chroma sample array S_{Cr} and the function $clipCidx1$ corresponds to $Clip1_C$.

The $(nCurrSw) \times (nCurrSh)$ block of the reconstructed sample array $recSamples$ at location (x_{Curr} , y_{Curr}) is derived as follows:

$$\begin{aligned} recSamples[x_{Curr} + i][y_{Curr} + j] = clipCidx1(\underline{predSamples[i][j]} + \underline{resSamples[i][j]}) \\ \text{with } i = 0..nCurrSw - 1, j = 0..nCurrSh - 1 \end{aligned} \quad (8-327)$$

81. The technology discussion above and the exemplary Accused Products provide context for Plaintiff's infringement allegations.

82. At a minimum, TCL has known of the '169 patent at least as early as the filing date of the complaint. In addition, TCL has known about the '169 patent since at least September 11, 2020, when TCL was given access to a data room providing notice of its infringement.

83. On information and belief, since at least the above-mentioned date when TCL was on notice of its infringement, TCL has actively induced, under U.S.C. § 271(b), its distributors, customers, subsidiaries, importers, and/or consumers that import, purchase, or sell the Accused Products that include or are made using all of the limitations of one or more claims of the '169 patent to directly infringe one or more claims of the '169 patent by using, offering for sale, selling,

and/or importing the Accused Products. Since at least the notice provided on the above-mentioned date, TCL does so with knowledge, or with willful blindness of the fact, that the induced acts constitute infringement of the '169 patent. TCL intends to cause, and has taken affirmative steps to induce infringement by its distributors, importers, customers, subsidiaries, and/or consumers by at least, inter alia, creating advertisements that promote the infringing use of the Accused Products, creating and/or maintaining established distribution channels for the Accused Products into and within the United States, manufacturing the Accused Products in conformity with U.S. laws and regulations, distributing or making available instructions or manuals for these products to purchasers and prospective buyers, testing and certifying features related to H.265 decoding in the Accused Products, and/or providing technical support, replacement parts, or services for these products to these purchasers in the United States.

84. On information and belief, despite having knowledge of the '169 patent and knowledge that it is directly and/or indirectly infringing one or more claims of the '169 patent, TCL has nevertheless continued its infringing conduct and disregarded an objectively high likelihood of infringement. TCL's infringing activities relative to the '169 patent have been, and continue to be, willful, wanton, malicious, in bad-faith, deliberate, consciously wrongful, flagrant, characteristic of a pirate, and an egregious case of misconduct beyond typical infringement such that Plaintiff is entitled under 35 U.S.C. § 284 to enhanced damages up to three times the amount found or assessed.

85. SPV has been damaged as a result of TCL's infringing conduct described in this Count. TCL is, thus, liable to SPV in an amount that adequately compensates SPV for TCL's infringements, which, by law, cannot be less than a reasonable royalty, together with interest and costs as fixed by this Court under 35 U.S.C. § 284.

COUNT IV

(INFRINGEMENT OF U.S. PATENT NO. 8,737,476)

86. Plaintiff incorporates paragraphs 1 through 85 herein by reference.

87. SPV is the assignee of the '476 patent, entitled "Image decoding device, image decoding method, integrated circuit, and program for performing parallel decoding of coded image data," with ownership of all substantial rights in the '476 patent, including the right to exclude others and to enforce, sue, and recover damages for past and future infringements.

88. The '476 patent is valid, enforceable, and was duly issued in full compliance with Title 35 of the United States Code. The '476 patent issued from U.S. Patent Application No. 12/812,134.

89. TCL has and continues to directly and/or indirectly infringe (by inducing infringement) one or more claims of the '476 patent in this judicial district and elsewhere in Texas and the United States.

90. On information and belief, TCL designs, develops, manufactures, assembles and markets mobile phones, televisions, and other devices configured to decode H.265 video. *See* <https://www.businesswire.com/news/home/20140904006500/en/Leading-TV-Maker-TCL-Adopt-DivX%C2%AE-HEVC> (last visited Jan. 9, 2021) (stating "TCL Corporation will adopt the industry leading DivX® HEVC technology for its global line of digital televisions, enabling the playback of high-quality, highly efficient Ultra HD (4K) video in the living room"); *see also* <https://www.amazon.com/ask/questions/TxH21ZVXC0DLJT> (last visited Jan. 9, 2021) (stating "The built-in media Player on TCL Roku TVs is designed to play movies, pictures, and music using the most popular file formats, including HEVC/H.265.").

91. TCL directly infringes the '476 patent via 35 U.S.C. § 271(a) by making, offering for sale, selling, and/or importing those Accused Products, their components and processes, and/or

products containing the same that incorporate the fundamental technologies covered by the '476 patent to, for example, its alter egos, agents, intermediaries, distributors, importers, customers, subsidiaries, and/or consumers. Furthermore, on information and belief, TCL sells and makes the Accused Products outside of the United States, delivers those products to its customers, distributors, and/or subsidiaries in the United States, or in the case that it delivers the Accused Products outside of the United States it does so intending and/or knowing that those products are destined for the United States and/or designing those products for sale in the United States, thereby directly infringing the '476 patent. *See, e.g., Lake Cherokee Hard Drive Techs., L.L.C. v. Marvell Semiconductor, Inc.*, 964 F. Supp. 2d 653, 658 (E.D. Tex. 2013). Furthermore, TCL directly infringes the '476 patent through its direct involvement in the activities of its subsidiaries, including TTE Technology, Inc. and TCT Mobile (US) Inc., including by selling and offering for sale the Accused Products directly to such subsidiaries and importing the Accused Products into the United States for such subsidiaries. Such subsidiaries conduct activities that constitute direct infringement of the '476 patent under 35 U.S.C. § 271(a) by making, offering for sale, selling, and/or importing those Accused Products. For example, and on information and belief, TCL offers for sale, sells, and imports the Accused Products within the U.S. to, for example, its distributors, customers, subsidiaries, importers, and/or consumers. Further, TCL is vicariously liable for this infringing conduct of its U.S.-based sales subsidiaries, e.g., TTE Technology, Inc. and TCT Mobile (US) Inc., (under both the alter ego and agency theories) because, as an example and on information and belief, TCL and TTE Technology, Inc. and TCT Mobile (US) Inc. are essentially the same company, and TCL has the right and ability to control its subsidiaries infringing acts and receives a direct financial benefit from the infringement of its U.S.-based sales subsidiaries, e.g., TTE Technology, Inc. and TCT Mobile (US) Inc.

92. For example, TCL infringes claim 14 of the '476 patent via the Accused Products. The Accused Products perform the “image decoding method of decoding coded image data on a block-by-block basis, the coded image data being resulted from coding, on a block-by-block basis, of image data partitioned into blocks each of which has a predetermined number of pixels” of claim 14. For example, the Accused Products include an H.265 decoder that receives a coded image and decodes it on a block-by-block basis. The coded image resulted from coding, on a block-by-block basis, of image data partitioned into blocks, known as CTUs. The CTUs have a predetermined number of pixels (e.g., 64 x 64 pixels).

93. The Accused Products perform “pre-decoding, on a block-by-block basis, reference information indicating a number of reference images to be referred to on a block-by-block basis for decoding the coded image data.” For example, as part of processing H.265 encoded video, the Accused Products use “slice decoding.” The slice decoding process includes obtaining reference information that indicates a number of reference images for decoding an image slice prior to decoding (i.e. pre-decoding) the current image to be decoded on a block-by-block basis. The Accused Products receive information from the slice header that include RPS (Reference Picture Set) information. The ITU-T H.265 Standard provides support for this:

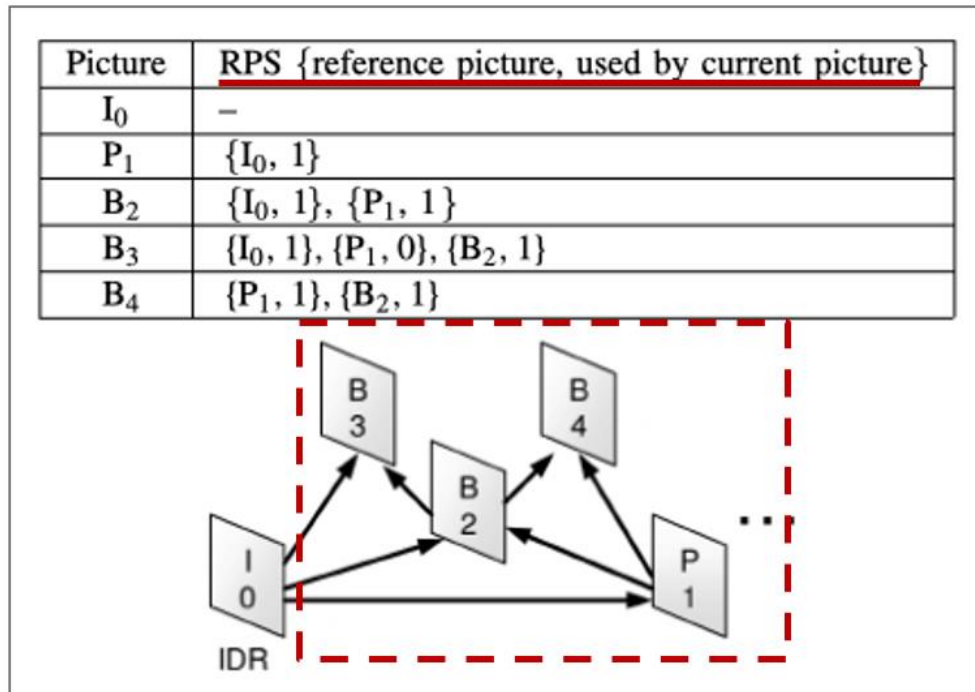


Fig. 7. Coding structure for RPS example.

94. The RPS information contains reference information indicating number of images to be referred to for decoding an image slice (e.g. in the example above, images I₀ and P₁ are the reference images used to decode image B₂). For example, RPS contains syntax and index structures that refer to one or more reference pictures and how those reference pictures are to be used to decode image slices. Further, the RPS information also contains reference information indicating number of images to be referred to for decoding an image slice (e.g. in the example above, the number of reference images for Picture B₂ is two). The slice header containing the status of the DPB (Decoded Picture Buffer) informs the Accused Product's H.265 decoder of the number of reference images to be referred to for decoding an image slice (e.g., image B₂ above requires two reference images to be decoded).

95. The Accused Products perform "calculating, on a block-by-block basis using the reference information, a predictive data amount of a reference image to be read out on a block-by-block basis from a storage unit for decoding the coded image data, the storage unit storing data of

at least one reference image to be referred to for decoding the coded image data.” For example, in H.265/HEVC, the DPB (Decoded Picture Buffer) is a storage unit that stores RPS information, including the reference images to be used for decoding an image slice. In the example above, the DPB stores three reference images (I0, P1, B2) that are used in the example’s HEVC decoding process. The Accused Products use the RPS reference information to calculate the amount of reference image data required to decode an image slice. More specifically, the H.265 decoder determines the total amount of reference image data (predictive data amount) required to decode an image slice. For example, for ‘n’ number of reference images the total predictive data amount is ‘n’ times the data amount of one reference image. In the example above, to decode the B2 image the H.265 decoder calculates that a predictive data amount associated with two reference images (I0 and P1) is to be read out from the DPB since two reference images are used to decode the image B2.

96. The Accused Products perform “determining, using the predictive data amount calculated, multiple blocks in the coded image data which are to be decoded in parallel, in such a manner as to reduce variation in amounts of data read out from the storage unit.” For example, the Accused Products use the predictive data (referenced above) and the reference images to determine the blocks (CTUs) that are to be decoded in parallel in the current image to be decoded. For example, as shown above, the H.265 decoder determines the multiple blocks in image B2 to be decoded in parallel using exemplary reference images I0 and P1.

97. The Accused Products perform “decoding in parallel the determined multiple blocks in the coded image data.” For example, the Accused Products decode the determined multiple blocks in parallel. For example, as shown above, multiple blocks in exemplary image B2

are decoded in parallel while the exemplary H.265 decoder uses images I0 and P1 as reference images to decode the same.

98. The technology discussion above and the exemplary Accused Products provide context for Plaintiff's allegations that each limitation of claim 14 is met.

99. At a minimum, TCL has known of the '476 patent at least as early as the filing date of the complaint. In addition, TCL has known about the '476 patent since at least September 11, 2020, when TCL was given access to a data room providing notice of its infringement.

100. On information and belief, since at least the above-mentioned date when TCL was on notice of its infringement, TCL has actively induced, under U.S.C. § 271(b), its distributors, customers, subsidiaries, importers, and/or consumers that import, purchase, or sell the Accused Products that include or are made using all of the limitations of one or more claims of the '476 patent to directly infringe one or more claims of the '476 patent by using, offering for sale, selling, and/or importing the Accused Products. Since at least the notice provided on the above-mentioned date, TCL does so with knowledge, or with willful blindness of the fact, that the induced acts constitute infringement of the '476 patent. TCL intends to cause, and has taken affirmative steps to induce infringement by its distributors, importers, customers, subsidiaries, and/or consumers by at least, inter alia, creating advertisements that promote the infringing use of the Accused Products, creating and/or maintaining established distribution channels for the Accused Products into and within the United States, manufacturing the Accused Products in conformity with U.S. laws and regulations, distributing or making available instructions or manuals for these products to purchasers and prospective buyers, testing and certifying features related to H.265 decoding in the Accused Products, and/or providing technical support, replacement parts, or services for these products to these purchasers in the United States.

101. On information and belief, despite having knowledge of the '476 patent and knowledge that it is directly and/or indirectly infringing one or more claims of the '476 patent, TCL has nevertheless continued its infringing conduct and disregarded an objectively high likelihood of infringement. TCL's infringing activities relative to the '476 patent have been, and continue to be, willful, wanton, malicious, in bad-faith, deliberate, consciously wrongful, flagrant, characteristic of a pirate, and an egregious case of misconduct beyond typical infringement such that Plaintiff is entitled under 35 U.S.C. § 284 to enhanced damages up to three times the amount found or assessed.

102. SPV has been damaged as a result of TCL's infringing conduct described in this Count. TCL is, thus, liable to SPV in an amount that adequately compensates SPV for TCL's infringements, which, by law, cannot be less than a reasonable royalty, together with interest and costs as fixed by this Court under 35 U.S.C. § 284.

COUNT V

(INFRINGEMENT OF U.S. PATENT NO. 8,971,401)

103. Plaintiff incorporates paragraphs 1 through 102 herein by reference.

104. SPV is the assignee of the '401 patent, entitled "Image decoding device" with ownership of all substantial rights in the '401 patent, including the right to exclude others and to enforce, sue, and recover damages for past and future infringements.

105. The '401 patent is valid, enforceable, and was duly issued in full compliance with Title 35 of the United States Code. The '401 patent issued from U.S. Patent Application No. 13/246,503.

106. TCL has and continues to directly and/or indirectly infringe (by inducing infringement) one or more claims of the '401 patent in this judicial district and elsewhere in Texas and the United States.

107. On information and belief, TCL designs, develops, manufactures, assembles and markets mobile phones, televisions, and other devices configured to decode H.265 video. *See* <https://www.businesswire.com/news/home/20140904006500/en/Leading-TV-Maker-TCL-Adopt-DivX%C2%AE-HEVC> (last visited Jan. 9, 2021) (stating “TCL Corporation will adopt the industry leading DivX® HEVC technology for its global line of digital televisions, enabling the playback of high-quality, highly efficient Ultra HD (4K) video in the living room”); *see also* <https://www.amazon.com/ask/questions/TxH21ZVXC0DLJT> (last visited Jan. 9, 2021) (stating “The built-in media Player on TCL Roku TVs is designed to play movies, pictures, and music using the most popular file formats, including HEVC/H.265.”).

108. TCL directly infringes the ’401 patent via 35 U.S.C. § 271(a) by making, offering for sale, selling, and/or importing those Accused Products, their components and processes, and/or products containing the same that incorporate the fundamental technologies covered by the ’401 patent to, for example, its alter egos, agents, intermediaries, distributors, importers, customers, subsidiaries, and/or consumers. Furthermore, on information and belief, TCL sells and makes the Accused Products outside of the United States, delivers those products to its customers, distributors, and/or subsidiaries in the United States, or in the case that it delivers the Accused Products outside of the United States it does so intending and/or knowing that those products are destined for the United States and/or designing those products for sale in the United States, thereby directly infringing the ’401 patent. *See, e.g., Lake Cherokee Hard Drive Techs., L.L.C. v. Marvell Semiconductor, Inc.*, 964 F. Supp. 2d 653, 658 (E.D. Tex. 2013). Furthermore, TCL directly infringes the ’401 patent through its direct involvement in the activities of its subsidiaries, including TTE Technology, Inc. and TCT Mobile (US) Inc., including by selling and offering for sale the Accused Products directly to such subsidiaries and importing the Accused Products into

the United States for such subsidiaries. Such subsidiaries conduct activities that constitute direct infringement of the '401 patent under 35 U.S.C. § 271(a) by making, offering for sale, selling, and/or importing those Accused Products. For example, and on information and belief, TCL offers for sale, sells, and imports the Accused Products within the U.S. to, for example, its distributors, customers, subsidiaries, importers, and/or consumers. Further, TCL is vicariously liable for this infringing conduct of its U.S.-based sales subsidiaries, e.g., TTE Technology, Inc. and TCT Mobile (US) Inc., (under both the alter ego and agency theories) because, as an example and on information and belief, TCL and TTE Technology, Inc. and TCT Mobile (US) Inc. are essentially the same company, and TCL has the right and ability to control its subsidiaries infringing acts and receives a direct financial benefit from the infringement of its U.S.-based sales subsidiaries, e.g., TTE Technology, Inc. and TCT Mobile (US) Inc.

109. For example, TCL infringes claim 1 of the '401 patent via the Accused Products. The Accused Products comprise the “image decoding device for processing an input bit stream containing encoded data obtained by encoding a moving picture using intra-frame prediction, where each of the macroblocks of the moving picture includes a plurality of prediction units for the intra-frame prediction” of claim 1. For example, the Accused Products are configured to decode H.265 encoded video that comprises input bitstreams encoded using intra-frame prediction. The CTUs (macroblocks) of the video frames include a plurality of Prediction Units (PUs) for the intra-prediction.

110. The Accused Products comprise “a stream divider configured to divide the input bit stream into a plurality of sub-streams.” For example, the Accused Products are configured to use the CABAC parsing process. In the CABAC parsing process, a stream divider is configured to divide the input bitstream into slices (sub-streams) to be decoded. The sub-streams comprise CTU

rows for parallel processing, including but not limited to Wavefront Parallel Processing (WPP), which is used by H.265 for entropy decoding.

111. The Accused Products comprise “a plurality of image decoders each configured to decode the corresponding one of the plurality of sub-streams, thereby outputting images.” For example, as part of WPP, the Accused Products are configured to use a plurality of decoders to decode the slices in parallel. The plurality of image decoders may comprise a plurality of physical and/or logical cores/threads/engines/units.

112. The Accused Products are configured such that “the stream divider divides the encoded data corresponding to one of the macroblocks into groups each made up of at least one of the prediction units and outputs the sub-streams so that the groups are included in different ones of the sub-streams, each of the sub-streams includes prediction units from different macroblocks.” For example, the H.265 encoded data corresponding to one of the CTUs (macroblocks) is divided into a plurality of coding units (CU) (groups), each group includes at least one of the prediction units. Individual CTUs including their CU (groups) are included in different WPP slices (sub-streams), with each slice including PUs from different CTUs (macroblocks).

113. The technology discussion above and the exemplary Accused Products provide context for Plaintiff’s allegations that each limitation of claim 14 is met.

114. At a minimum, TCL has known of the ’401 patent at least as early as the filing date of the complaint. In addition, TCL has known about the ’401 patent since at least September 11, 2020, when TCL was given access to a data room providing notice of its infringement.

115. On information and belief, since at least the above-mentioned date when TCL was on notice of its infringement, TCL has actively induced, under U.S.C. § 271(b), its distributors, customers, subsidiaries, importers, and/or consumers that import, purchase, or sell the Accused

Products that include or are made using all of the limitations of one or more claims of the '401 patent to directly infringe one or more claims of the '401 patent by using, offering for sale, selling, and/or importing the Accused Products. Since at least the notice provided on the above-mentioned date, TCL does so with knowledge, or with willful blindness of the fact, that the induced acts constitute infringement of the '401 patent. TCL intends to cause, and has taken affirmative steps to induce infringement by its distributors, importers, customers, subsidiaries, and/or consumers by at least, inter alia, creating advertisements that promote the infringing use of the Accused Products, creating and/or maintaining established distribution channels for the Accused Products into and within the United States, manufacturing the Accused Products in conformity with U.S. laws and regulations, distributing or making available instructions or manuals for these products to purchasers and prospective buyers, testing and certifying features related to H.265 decoding in the Accused Products, and/or providing technical support, replacement parts, or services for these products to these purchasers in the United States.

116. On information and belief, despite having knowledge of the '401 patent and knowledge that it is directly and/or indirectly infringing one or more claims of the '401 patent, TCL has nevertheless continued its infringing conduct and disregarded an objectively high likelihood of infringement. TCL's infringing activities relative to the '401 patent have been, and continue to be, willful, wanton, malicious, in bad-faith, deliberate, consciously wrongful, flagrant, characteristic of a pirate, and an egregious case of misconduct beyond typical infringement such that Plaintiff is entitled under 35 U.S.C. § 284 to enhanced damages up to three times the amount found or assessed.

117. SPV has been damaged as a result of TCL's infringing conduct described in this Count. TCL is, thus, liable to SPV in an amount that adequately compensates SPV for TCL's

infringements, which, by law, cannot be less than a reasonable royalty, together with interest and costs as fixed by this Court under 35 U.S.C. § 284.

COUNT VI

(INFRINGEMENT OF U.S. PATENT NO. 9,042,457)

118. Plaintiff incorporates paragraphs 1 through 117 herein by reference.

119. SPV is the assignee of the '457 patent, entitled "Image Decoding Apparatus and Image Coding Apparatus with Parallel Decoding," with ownership of all substantial rights in the '457 patent, including the right to exclude others and to enforce, sue, and recover damages for past and future infringements.

120. The '457 patent is valid, enforceable, and was duly issued in full compliance with Title 35 of the United States Code. The '457 patent issued from U.S. Patent Application No. 12/673,408.

121. TCL has and continues to directly and/or indirectly infringe (by inducing infringement) one or more claims of the '457 patent in this judicial district and elsewhere in Texas and the United States.

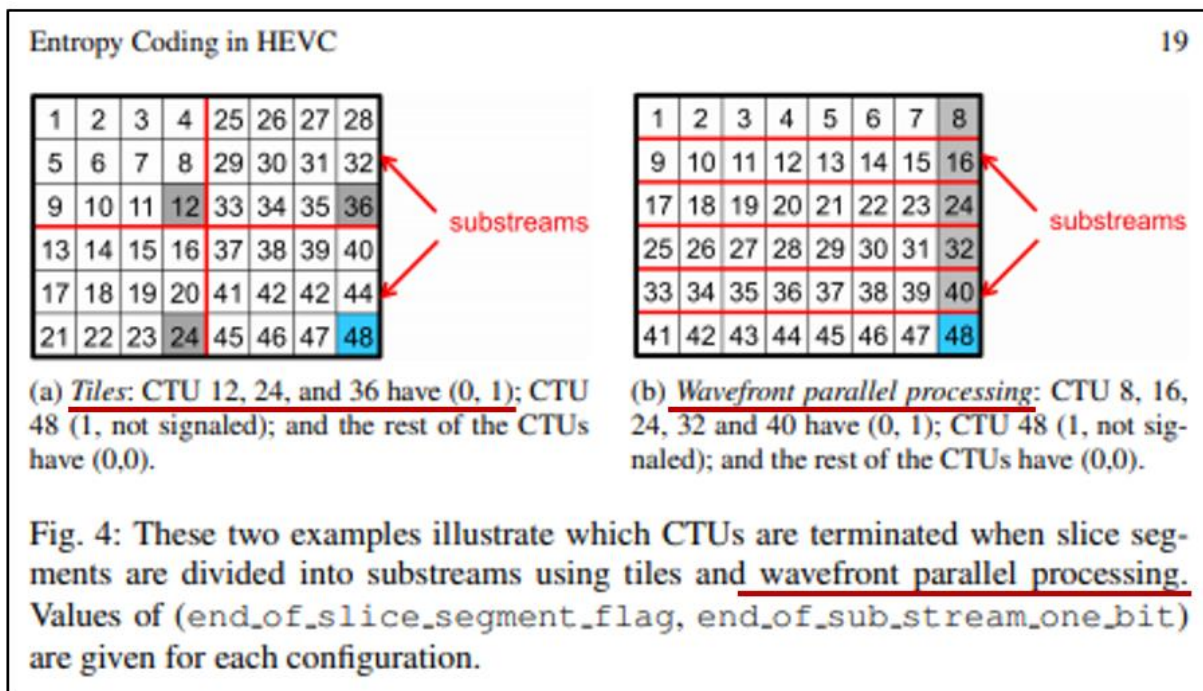
122. On information and belief, TCL designs, develops, manufactures, assembles and markets mobile phones, televisions, and other devices configured to decode H.265 video. *See* <https://www.businesswire.com/news/home/20140904006500/en/Leading-TV-Maker-TCL-Adopt-DivX%C2%AE-HEVC> (last visited Jan. 9, 2021) (stating "TCL Corporation will adopt the industry leading DivX® HEVC technology for its global line of digital televisions, enabling the playback of high-quality, highly efficient Ultra HD (4K) video in the living room"); *see also* <https://www.amazon.com/ask/questions/TxH21ZVXC0DLJT> (last visited Jan. 9, 2021) (stating "The built-in media Player on TCL Roku TVs is designed to play movies, pictures, and music using the most popular file formats, including HEVC/H.265.").

123. TCL directly infringes the '457 patent via 35 U.S.C. § 271(a) by making, offering for sale, selling, and/or importing those Accused Products, their components and processes, and/or products containing the same that incorporate the fundamental technologies covered by the '457 patent to, for example, its alter egos, agents, intermediaries, distributors, importers, customers, subsidiaries, and/or consumers. Furthermore, on information and belief, TCL sells and makes the Accused Products outside of the United States, delivers those products to its customers, distributors, and/or subsidiaries in the United States, or in the case that it delivers the Accused Products outside of the United States it does so intending and/or knowing that those products are destined for the United States and/or designing those products for sale in the United States, thereby directly infringing the '457 patent. *See, e.g., Lake Cherokee Hard Drive Techs., L.L.C. v. Marvell Semiconductor, Inc.*, 964 F. Supp. 2d 653, 658 (E.D. Tex. 2013). Furthermore, TCL directly infringes the '457 patent through its direct involvement in the activities of its subsidiaries, including TTE Technology, Inc. and TCT Mobile (US) Inc., including by selling and offering for sale the Accused Products directly to such subsidiaries and importing the Accused Products into the United States for such subsidiaries. Such subsidiaries conduct activities that constitute direct infringement of the '457 patent under 35 U.S.C. § 271(a) by making, offering for sale, selling, and/or importing those Accused Products. For example, and on information and belief, TCL offers for sale, sells, and imports the Accused Products within the U.S. to, for example, its distributors, customers, subsidiaries, importers, and/or consumers. Further, TCL is vicariously liable for this infringing conduct of its U.S.-based sales subsidiaries, e.g., TTE Technology, Inc. and TCT Mobile (US) Inc., (under both the alter ego and agency theories) because, as an example and on information and belief, TCL and TTE Technology, Inc. and TCT Mobile (US) Inc. are essentially the same company, and TCL has the right and ability to control its subsidiaries infringing acts and

receives a direct financial benefit from the infringement of its U.S.-based sales subsidiaries, e.g., TTE Technology, Inc. and TCT Mobile (US) Inc.

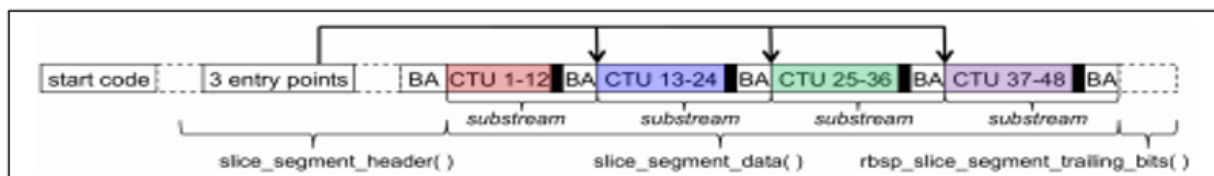
124. For example, TCL infringes claim 7 of the '457 patent via the Accused Products. The Accused Products perform the “image decoding method for decoding, using a processor, a coded stream generated by coding, on a block-by-block basis, a picture including blocks” of claim 7. For example, the Accused Products include a video decoder that is configured to decode H.265 encoded data. Each of the Accused Products includes a processor for executing instructions to operate the full functionality of the product, including H.265 decoding functionality. The Accused Products use a processor to decode a coded stream that resulted from coding, on a block-by-block basis, a picture including blocks, known as CTUs.

125. The Accused Products use the processor for “performing, on a block group-by-block group basis, variable length decoding, and generating block decoding information using a result of the variable length decoding for each of a plurality of block groups which (i) contain blocks, (ii) are different from each other, and (iii) are included in the coded stream, the block decoding information for the block group being a parameter necessary for decoding another block group from among the plurality of block groups.” For example, the processor performs, on a block group-by-block group basis, variable length decoding, and generates block decoding information using a result of the variable length decoding of plurality of block groups. The source code within the Accused Products is believed to incorporate variable length decoding on a block group-by-block group basis in conformance with H.265 (e.g., predecoding the slice header provides syntax elements for subsequent decoding operations).



https://www.researchgate.net/publication/290180658_Entropy_Coding_in_HEVC

126. The processor determines the locations, within the network abstraction layer (NAL) unit, of encoded syntax elements. The encoded syntax elements point to the start point of the substreams in the bitstream, with the locations of the start points obtained as a result of the variable length decoding of the syntax elements. Thus, the block decoding information (e.g., encoded syntax elements) are generated using the result of the variable length decoding for each block group. The plurality of block groups contain blocks. Each block group (substream) contains a unique set of blocks. This is shown, for example, in the annotated image below by an encoded bitstream comprising four substreams (block groups) each comprised of a different group of CTUs.



https://www.researchgate.net/publication/290180658_Entropy_Coding_in_HEVC

127. The plurality of block groups are included in the coded stream. For example, the substreams are included in the slice segment data. The block decoding information for the block group is a parameter necessary for decoding another block group from among the plurality of block groups. For example, the block decoding information (e.g., encoded syntax elements) is necessary for decoding another substream: there is a contextual dependency between substreams.

128. The Accused Products use the processor for “decoding, on a block-by-block basis using the block decoding information generated using the result of the variable length decoding performed in said performing, each of the plurality of block groups in parallel, wherein said decoding performed on the block-by-block basis on each of the plurality of block groups in parallel includes re-executing the variable length decoding on each of the plurality of block groups on which the variable length decoding has been performed in said performing to determine a prediction mode to be performed on the block group.” For example, H.265 is designed for platforms configured to perform parallel decoding of a plurality of individual substreams (block groups). The source code within the Accused Products is believed to incorporate decoding in parallel in conformance with H.265. The Accused Products support parallel processing, such as Wavefront Parallel Processing, to conform with H.265. The blocks in one of the block groups (substreams) are decoded by using the block decoding information (syntax elements). The syntax elements signal the start of each substream. Substreams are decoded in parallel on a block-by-block basis. The decoding performed on the block-by-block basis on each of the plurality of block groups in parallel includes re-executing the variable length decoding on each of the plurality of blocks groups on which the variable length decoding has been performed in said performing to determine a prediction mode to be performed on the block group. For example, the entropy decoder re-executes variable length decoding on the blocks in the block groups using the syntax data

obtained in the predecoding process. The prediction mode is dependent on the syntax elements of the current block in view of the previously decoded blocks' syntax elements. H.265 specifies that information allowing for a determination of a prediction mode to be performed on a block group is contained in the coded bitstream. The ITU-T H.265 Standard provides support for this:

Table 7-10 – Name association to prediction mode and partitioning type

CuPredMode[x0 y0]	part_mode	IntraSplitFlag	PartMode
MODE_INTRA	0	0	PART_2Nx2N
	1	1	PART_NxN
MODE_INTER	0	0	PART_2Nx2N
	1	0	PART_2NxN
	2	0	PART_Nx2N
	3	0	PART_NxN
	4	0	PART_2NxnU
	5	0	PART_2NxnD
	6	0	PART_nLx2N
	7	0	PART_nRx2N

<https://www.itu.int/rec/T-REC-H.265/en> p. 101

Table 8-1 – Specification of intra prediction mode and associated names

Intra prediction mode	Associated name
0	INTRA_PLANAR
1	INTRA_DC
2..34	INTRA_ANGULAR2..INTRA_ANGULAR34

<https://www.itu.int/rec/T-REC-H.265/en> p. 118

129. The technology discussion above and the exemplary Accused Products provide context for Plaintiff's allegations that each limitation of claim 7 is met.

130. At a minimum, TCL has known of the '457 patent at least as early as the filing date of the complaint. In addition, TCL has known about the '457 patent since at least September 11, 2020, when TCL was given access to a data room providing notice of its infringement.

131. On information and belief, since at least the above-mentioned date when TCL was on notice of its infringement, TCL has actively induced, under U.S.C. § 271(b), its distributors, customers, subsidiaries, importers, and/or consumers that import, purchase, or sell the Accused Products that include or are made using all of the limitations of one or more claims of the '457 patent to directly infringe one or more claims of the '457 patent by using, offering for sale, selling, and/or importing the Accused Products. Since at least the notice provided on the above-mentioned date, TCL does so with knowledge, or with willful blindness of the fact, that the induced acts constitute infringement of the '457 patent. TCL intends to cause, and has taken affirmative steps

to induce infringement by its distributors, importers, customers, subsidiaries, and/or consumers by at least, inter alia, creating advertisements that promote the infringing use of the Accused Products, creating and/or maintaining established distribution channels for the Accused Products into and within the United States, manufacturing the Accused Products in conformity with U.S. laws and regulations, distributing or making available instructions or manuals for these products to purchasers and prospective buyers, testing and certifying features related to H.265 decoding in the Accused Products, and/or providing technical support, replacement parts, or services for these products to these purchasers in the United States.

132. On information and belief, despite having knowledge of the '457 patent and knowledge that it is directly and/or indirectly infringing one or more claims of the '457 patent, TCL has nevertheless continued its infringing conduct and disregarded an objectively high likelihood of infringement. TCL's infringing activities relative to the '457 patent have been, and continue to be, willful, wanton, malicious, in bad-faith, deliberate, consciously wrongful, flagrant, characteristic of a pirate, and an egregious case of misconduct beyond typical infringement such that Plaintiff is entitled under 35 U.S.C. § 284 to enhanced damages up to three times the amount found or assessed.

133. SPV has been damaged as a result of TCL's infringing conduct described in this Count. TCL is, thus, liable to SPV in an amount that adequately compensates SPV for TCL's infringements, which, by law, cannot be less than a reasonable royalty, together with interest and costs as fixed by this Court under 35 U.S.C. § 284.

COUNT VII

(INFRINGEMENT OF U.S. PATENT NO. 9,414,059)

134. Plaintiff incorporates paragraphs 1 through 133 herein by reference.

135. SPV is the assignee of the '059 patent, entitled "Image Processing Device, Image Coding Method, and Image Processing Method" with ownership of all substantial rights in the '059 patent, including the right to exclude others and to enforce, sue, and recover damages for past and future infringements.

136. The '059 patent is valid, enforceable, and was duly issued in full compliance with Title 35 of the United States Code. The '059 patent issued from U.S. Patent Application No. 13/877,389.

137. TCL has and continues to directly and/or indirectly infringe (by inducing infringement) one or more claims of the '059 patent in this judicial district and elsewhere in Texas and the United States.

138. On information and belief, TCL designs, develops, manufactures, assembles and markets mobile phones, televisions, and other devices configured to decode H.265 video. *See* <https://www.businesswire.com/news/home/20140904006500/en/Leading-TV-Maker-TCL-Adopt-DivX%C2%AE-HEVC> (last visited Jan. 9, 2021) (stating "TCL Corporation will adopt the industry leading DivX® HEVC technology for its global line of digital televisions, enabling the playback of high-quality, highly efficient Ultra HD (4K) video in the living room"); *see also* <https://www.amazon.com/ask/questions/TxH21ZVXC0DLJT> (last visited Jan. 9, 2021) (stating "The built-in media Player on TCL Roku TVs is designed to play movies, pictures, and music using the most popular file formats, including HEVC/H.265.").

139. TCL directly infringes the '059 patent via 35 U.S.C. § 271(a) by making, offering for sale, selling, and/or importing those Accused Products, their components and processes, and/or products containing the same that incorporate the fundamental technologies covered by the '059 patent to, for example, its alter egos, agents, intermediaries, distributors, importers, customers,

subsidiaries, and/or consumers. Furthermore, on information and belief, TCL sells and makes the Accused Products outside of the United States, delivers those products to its customers, distributors, and/or subsidiaries in the United States, or in the case that it delivers the Accused Products outside of the United States it does so intending and/or knowing that those products are destined for the United States and/or designing those products for sale in the United States, thereby directly infringing the '059 patent. *See, e.g., Lake Cherokee Hard Drive Techs., L.L.C. v. Marvell Semiconductor, Inc.*, 964 F. Supp. 2d 653, 658 (E.D. Tex. 2013). Furthermore, TCL directly infringes the '059 patent through its direct involvement in the activities of its subsidiaries, including TTE Technology, Inc. and TCT Mobile (US) Inc., including by selling and offering for sale the Accused Products directly to such subsidiaries and importing the Accused Products into the United States for such subsidiaries. Such subsidiaries conduct activities that constitute direct infringement of the '059 patent under 35 U.S.C. § 271(a) by making, offering for sale, selling, and/or importing those Accused Products. For example, and on information and belief, TCL offers for sale, sells, and imports the Accused Products within the U.S. to, for example, its distributors, customers, subsidiaries, importers, and/or consumers. Further, TCL is vicariously liable for this infringing conduct of its U.S.-based sales subsidiaries, e.g., TTE Technology, Inc. and TCT Mobile (US) Inc., (under both the alter ego and agency theories) because, as an example and on information and belief, TCL and TTE Technology, Inc. and TCT Mobile (US) Inc. are essentially the same company, and TCL has the right and ability to control its subsidiaries infringing acts and receives a direct financial benefit from the infringement of its U.S.-based sales subsidiaries, e.g., TTE Technology, Inc. and TCT Mobile (US) Inc.

140. For example, TCL infringes claim 1 of the '059 patent via the Accused Products. The Accused Products comprise an “image processing device which performs plural first

processes, by pipelining, on a coded stream obtained by dividing an image into plural coding unit blocks according to at least two numbers of pixels and coding the image on a coding unit block-by-block basis” of claim 1. For example, each of the Accused Products supports the H.265/HEVC standard. The Accused Products process H.265/HEVC encoded video via a pipelined process. A block comprises an array of samples (individual pixel data) that is used to code an image. The coding is performed on a block-by-block basis because an image will be partitioned into multiple blocks to be coded. The blocks can be of various sizes, therefore containing at least two numbers of pixels (e.g., 8x8, 16x16, etc.).

141. The Accused Products comprise “plural first process units configured to perform, by the pipelining, the plural first processes on the coded stream by each executing one of the plural first processes.” For example, the Accused Products comprise multiple first process units configured to decode the sub-streams of the coded stream in parallel. The cores of the processor on the Accused Products can comprise separate first process units. The source code within the Accused Products is believed to incorporate one or more parallel processing tools supported by the H.265/HEVC standard. Such tools include, but are not necessarily limited to, tiles, wavefront parallel processing, and entropy slices. In a wavefront parallel processing example, CTUs in different slices are decoded in parallel. The processing units handling the respective threads via pipelining comprise the plural first process units.

142. The Accused Products comprise “a control unit configured to divide or connect portions of the coded stream into plural first processing unit blocks according to a first number of pixels, each of the first processing unit blocks having the same number of pixels in the image, and control the plural first process units to cause the plural first processes to be executed for each of the first processing unit blocks.” For example, the control path for the CABAC decoder in the

Accused Products serves as the control unit. The source code within the Accused Products that operates the HEVC functionality, including dividing portions of the coded stream into slices that are further partitioned into CTUs of the same size serves as the control unit. The plural first processes are executed for each of the CTUs. The syntax data of the bitstream uses entry points to indicate how to construct the substreams for parallel processing.

143. The technology discussion above and the exemplary Accused Products provide context for Plaintiff's allegations that each limitation of claim 1 is met.

144. At a minimum, TCL has known of the '059 patent at least as early as the filing date of the complaint. In addition, TCL has known about the '059 patent since at least September 11, 2020, when TCL was given access to a data room providing notice of its infringement.

145. On information and belief, since at least the above-mentioned date when TCL was on notice of its infringement, TCL has actively induced, under U.S.C. § 271(b), its distributors, customers, subsidiaries, importers, and/or consumers that import, purchase, or sell the Accused Products that include or are made using all of the limitations of one or more claims of the '059 patent to directly infringe one or more claims of the '059 patent by using, offering for sale, selling, and/or importing the Accused Products. Since at least the notice provided on the above-mentioned date, TCL does so with knowledge, or with willful blindness of the fact, that the induced acts constitute infringement of the '059 patent. TCL intends to cause, and has taken affirmative steps to induce infringement by its distributors, importers, customers, subsidiaries, and/or consumers by at least, inter alia, creating advertisements that promote the infringing use of the Accused Products, creating and/or maintaining established distribution channels for the Accused Products into and within the United States, manufacturing the Accused Products in conformity with U.S. laws and regulations, distributing or making available instructions or manuals for these products to

purchasers and prospective buyers, testing and certifying features related to H.265 decoding in the Accused Products, and/or providing technical support, replacement parts, or services for these products to these purchasers in the United States.

146. On information and belief, despite having knowledge of the '059 patent and knowledge that it is directly and/or indirectly infringing one or more claims of the '059 patent, TCL has nevertheless continued its infringing conduct and disregarded an objectively high likelihood of infringement. TCL's infringing activities relative to the '059 patent have been, and continue to be, willful, wanton, malicious, in bad-faith, deliberate, consciously wrongful, flagrant, characteristic of a pirate, and an egregious case of misconduct beyond typical infringement such that Plaintiff is entitled under 35 U.S.C. § 284 to enhanced damages up to three times the amount found or assessed.

147. SPV has been damaged as a result of TCL's infringing conduct described in this Count. TCL is, thus, liable to SPV in an amount that adequately compensates SPV for TCL's infringements, which, by law, cannot be less than a reasonable royalty, together with interest and costs as fixed by this Court under 35 U.S.C. § 284.

CONCLUSION

148. Plaintiff SPV is entitled to recover from TCL the damages sustained by Plaintiff as a result of TCL's wrongful acts, and willful infringement, in an amount subject to proof at trial, which, by law, cannot be less than a reasonable royalty, together with interest and costs as fixed by this Court.

149. Plaintiff has incurred and will incur attorneys' fees, costs, and expenses in the prosecution of this action. The circumstances of this dispute may give rise to an exceptional case

within the meaning of 35 U.S.C. § 285, and Plaintiff is entitled to recover its reasonable and necessary attorneys' fees, costs, and expenses.

JURY DEMAND

150. Plaintiff hereby requests a trial by jury pursuant to Rule 38 of the Federal Rules of Civil Procedure.

PRAYER FOR RELIEF

151. Plaintiff respectfully requests that the Court find in its favor and against TCL, and that the Court grant Plaintiff the following relief:

1. A judgment that TCL has infringed the Asserted Patents as alleged herein, directly and/or indirectly by way of inducing infringement of such patents;
2. A judgment for an accounting of all damages sustained by Plaintiff as a result of the acts of infringement by TCL;
3. A judgment and order requiring TCL to pay Plaintiff damages under 35 U.S.C. § 284, including up to treble damages as provided by 35 U.S.C. § 284, and any royalties determined to be appropriate;
4. A judgment and order requiring TCL to pay Plaintiff pre-judgment and post-judgment interest on the damages awarded;
5. A judgment and order finding this to be an exceptional case and requiring TCL to pay the costs of this action (including all disbursements) and attorneys' fees as provided by 35 U.S.C. § 285; and
6. Such other and further relief as the Court deems just and equitable.

Dated: January 13, 2021

Respectfully submitted,

/s/ Patrick J. Conroy

Patrick J. Conroy

Texas Bar No. 24012448

T. William Kennedy Jr.

Texas Bar No. 24055771

Jonathan H. Rastegar

Texas Bar No. 24064043

Jerry D. Tice, II

Texas Bar No. 24093263

Bragalone Conroy PC

2200 Ross Avenue

Suite 4500W

Dallas, TX 75201

Tel: (214) 785-6670

Fax: (214) 785-6680

pconroy@bcpc-law.com

bkennedy@bcpc-law.com

jrastegar@bcpc-law.com

jtice@bcpc-law.com

Attorneys for Plaintiff

Sovereign Peak Ventures, LLC